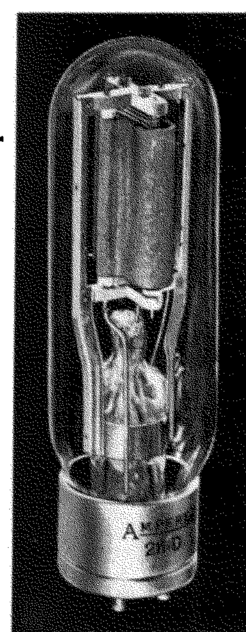
AMPEREX TRANSMITTING TUBE 211-D

FULLY INTERCHANGEABLE WITH AMPEREX HF 140

R.F. Power Amplifier, Oscillator, A.F. Power Amplifier, Modulator



MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier or Modulator—Class A

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	..	10	10
D.C. Plate Voltage	1250	1000	1250
D.C. Grid Voltage	..	—55	—77
Peak A.F. Grid Voltage	..	50	72
D.C. Plate Current (ma.)	..	70	60
Plate Dissipation (watts)	75	70	75
Load Resistance (ohms)	..	7600	9200
Power Output (watts)	..	12.2	20
Distortion (% Second Harmonic)	..	2.5	5

A.F. Power Amplifier or Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes	
A.C. Filament Voltage	..	10	10
D.C. Plate Voltage	1250	1000	1250
D.C. Grid Voltage	..	—77	—95
Load Resistance (per tube) (ohms)	..	1725	2250
Effective Load Resistance (Plate to Plate) (ohms)	..	6900	9000
Zero Signal Plate Current (ma.)	..	20	20
Peak A.F. Grid to Grid Voltage	..	348	390
Max. Signal D.C. Plate Current (ma.)	175	320	320
Max. Signal Plate Input (watts)	220	320	400
Plate Dissipation (watts)	100	..	..
Max. Signal Driving Power (Approx.) (watts)	..	5.5	7
Max. Signal Plate Power Output (watts)	..	216	280

R.F. Power Amplifier—Class B—Telephony

(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	..	10	10
D.C. Plate Voltage	1250	1000	1250
D.C. Grid Voltage	..	—60	—80
Peak R.F. Grid Voltage	..	100	100
D.C. Plate Current (ma.)	150	130	106
Plate Input (watts)	150	130	132
Plate Dissipation (watts)	100	88	86
D.C. Grid Current (Approx.) (ma.)	..	2	1
Driving Power at Peak Modulation (Approx.) (watts)	..	3.5	2.5
Plate Power Output (watts)	..	42	46
Frequency Limit for Above Operation (megacycles)	15	20	15

GENERAL CHARACTERISTICS

Filament:		
Voltage	10	volts
Current	3.25	amperes
Amplification Factor	12	
Grid to Plate Transconductance at 100 ma.	4500	micromhos
Direct Interelectrode Capacitances:		
Grid to Plate	12.5	$\mu\mu f$
Grid to Filament	5.5	$\mu\mu f$
Plate to Filament	3.0	$\mu\mu f$

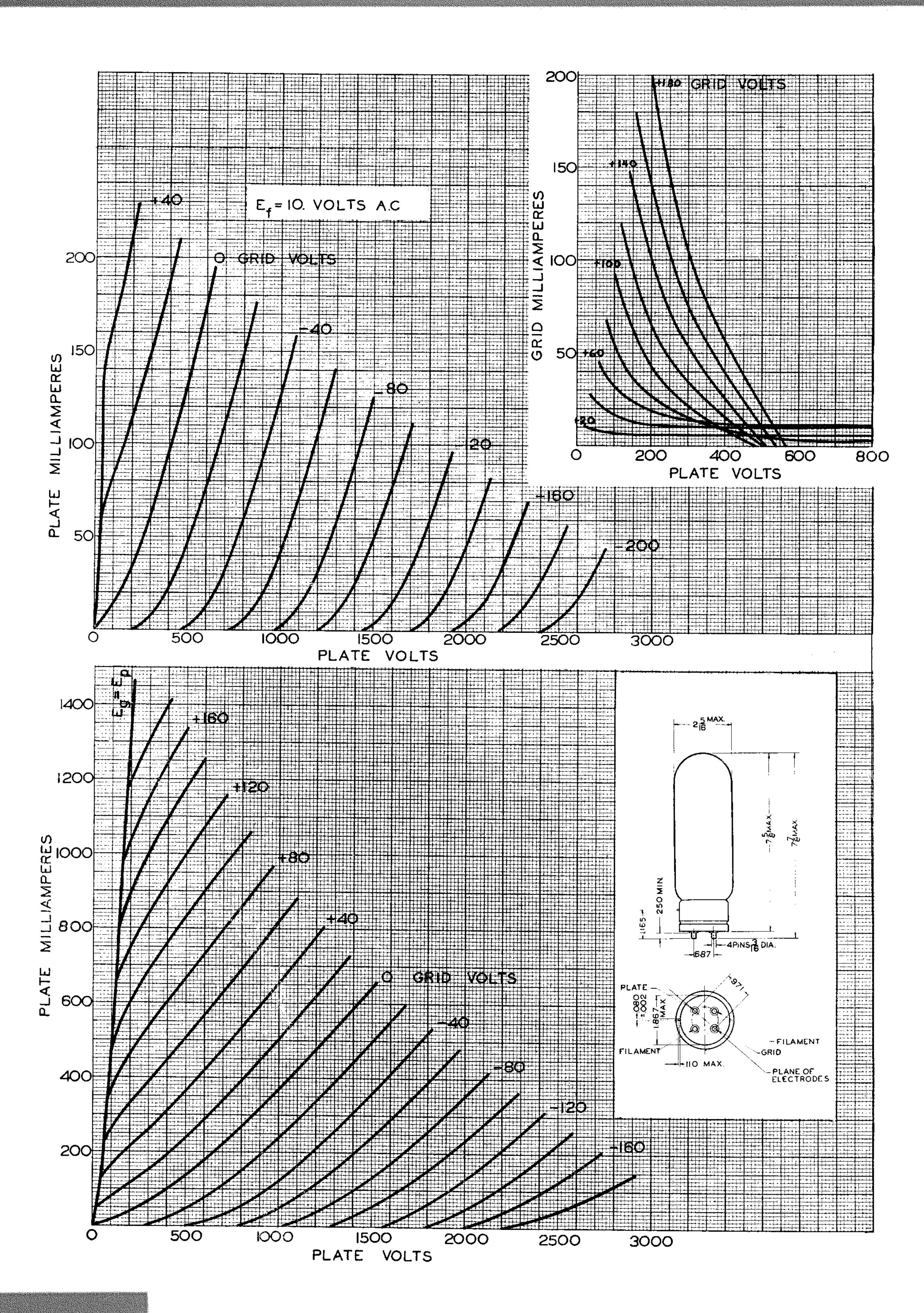
Plate Modulated R.F. Power Amplifier Class C—Telephony

(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	..	10	10
D.C. Plate Voltage	1250	1000	1250
D.C. Grid Voltage	—400	—260	—300
Peak R.F. Grid Voltage	..	390	430
D.C. Plate Current (ma.)	175	150	166
Plate Input (watts)	210	150	208
Plate Dissipation (watts)	67	35	60
D.C. Grid Current (Approx.) (ma.)	50	13	8
Driving Power (Approx.) (watts)	..	5	3.5
Plate Power Output (watts)	..	115	148
Frequency Limit for Above Operation (megacycles)	3	15	3
F.C.C. Broadcast Rating (watts)	125	..	125

R.F. Power Amplifier or Oscillator—Class C Telegraphy

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	..	10	10
D.C. Plate Voltage	1250	1000	1250
D.C. Grid Voltage	—400	—250	—300
Peak R.F. Grid Voltage	..	390	430
D.C. Plate Current (ma.)	175	165	166
Plate Input (watts)	220	165	208
Plate Dissipation (watts)	100	40	60
D.C. Grid Current (Approx.) (ma.)	50	16	8
Driving Power (Approx.) (watts)	..	6	3.5
Plate Power Output (watts)	..	125	148
Frequency Limit for Above Operation (megacycles)	15	20	15



E_f = 10. VOLTS A.C
+40
0 GRID VOLTS
-40
-80
-120
-160
-200
PLATE MILLIAMPERES
PLATE VOLTS
0
500
1000
1500
2000
2500
3000
50
100
150
200
+180 GRID VOLTS
+140
+100
+60
+20
GRID MILLIAMPERES
PLATE VOLTS
0
200
400
600
800
$E_g = E_p$
+160
+120
+80
+40
0 GRID VOLTS
-40
-80
-120
-160
PLATE MILLIAMPERES
PLATE VOLTS
200
400
600
800
1000
1200
1400
PLATE
FILAMENT
GRID
PLANE OF ELECTRODES